

SPEECH LABEL ACCELERATORS AND TECHNIQUES FOR USING SAME

Abstract of the Disclosure

Speech Label Accelerators (SLAs) are provided that comprise an indirect
5 memory, atom value memory, and adder circuitry. Optionally, the SLAs also comprise an
accumulator, a load/accumulate multiplexer (mux), and a control unit. There are a variety
of different configurations for the adder circuitry, and a configuration can be selected
based on speed, power, and area requirements. A number of techniques are provided that
allow a system having an SLA to handle more dimensions, atoms, or both than the SLA
10 was originally designed for. A "zig-zag" method is provided that speeds processing in a
system when using more dimensions than the SLA was originally designed for. Generally,
the kernels used by the SLA will be Gaussian and separable, but non-Gaussian kernels
and partially separable kernels may also be used by the SLA.